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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,539	10/09/2001	Shiro Fujieda	OMRNP008	9058

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EXAMINER

LE, BRIAN Q

ART UNIT PAPER NUMBER

2624

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/974,539

Applicant(s)

FUJIEDA, SHIRO

Examiner

Brian Q. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/30/2006 has been entered.

Response to Amendment and Arguments

2. In response to applicant's remarks, after fully consider the amended claims 1 and 4 and the newly added claims 8 and 9, the Examiner still found the prior arts to teaches the aforementioned claimed limitations.

Thus, the rejections of all of the claims are maintained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Cohen U.S. Patent No. 6,337,925.

Regarding claim 1, Cohen teaches a method of inspecting a contour of a target object (abstract), said method comprising the steps of:

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preparing a variable-density image of said contour (gradient calculation of pixels of image)

(column 5, lines 19-33);

extracting edge pixels along and from said contour on said image (masked and extracted traced object) (column 7, lines 3-25 and column 8, lines 50-62);

measuring directions of said edge pixels (column 4, 65-67 and column 5, lines 35-38), the direction of said edge pixels being defined as a direction that makes a specified angle (gradient angle) (column 5, lines 19-35) with the direction of the density gradient on said variable-density image at (value of pixel of gradient directions of each pixel) (column 5, lines 36-42), said each pixel;

selecting said edge pixels sequentially one edge pixel at a time (column 10, lines 60-67) and

comparing the direction of said one edge pixel with the direction of another of said edge pixels (column 19, lines 29-67) at a specified distance (FIG. 21, element 2125) from said one edge pixel to obtain a comparison result (column 19, lines 26-65); and

determining presence or absence of a defect in said contour from the comparison results obtained for said edge pixels (The process of determining the opacities and confidence of edges) (column 19, lines 7-25 and column 20, lines 35-60).

Regarding claim 2, Cohen teaches the method comprising the step of selecting said specified distance (predetermined edge zone width) (column 19, line 50).

For claim 4, please refer back to claim 1 for the teachings and explanations.

Referring to claim 5, Cohen discloses the apparatus wherein said measuring means measures an angle for each of said edge pixels, said angle indicating a perpendicular direction to the direction of density gradient at said each edge pixel (column 14, lines 31-47).

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For claim 6, Cohen also discloses the apparatus wherein said comparing means include distance setting means for setting said specified distance (column 19, lines 30-60).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen U.S. Patent No. 6,337,925 as applied to claim 1 above, and further in view of Shiohara U.S. Patent No. 6,343,158.

Regarding claim 3, Cohen discloses the usage of various extraction/masking techniques in the selection process (column 18, lines 41-51 and column 21, lines 57-65). However, Cohen does not explicitly discuss the selecting one from a plurality of edge-extraction filters each with a mask of a different size. Shiohara teaches an edge processing of images (abstract) utilizes the usage/selection of different filters (high and low frequency filters) with a mask of a different size (FIG. 14-FIG.15; column 2, lines 25-47; and column 6, lines 25-44). Modifying Cohen's method of processing edges of image according to Shiohara would be able to allow the flexibility in using different filters with a mask of a different size to better isolate/extract/filter the selected edge of the image. This would improve processing and therefore, it would have been obvious to one of ordinary skill in the art to modify Cohen according to Shiohara.

Regarding claim 7, please refer back to claim 3 for the teachings and explanations.

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7. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. U.S. Patent No. 6,337,925.

Regarding claims 8-9, Cohen does not explicitly teach wherein said specified angle is 90 degree. However, Cohen teaches a specified angle at various degrees (column 11, lines 10-20 and FIG. 5). In addition, as discussed in the background of the invention, an angle can also be perpendicular (column 2, lines 10-15), which is specified at 90 degrees. Thus, it would have been obvious for one of the ordinary skilled in the art to specify the angle at 90 degrees to further distinguish the boundary between regions of pixels (column 2, lines 5-15) or for other purpose in inspecting the contour of target object. This would improve processing and therefore, it would have been obvious for one skilled in the art to modify Cohen.

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Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q. Le whose telephone number is 571-272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL
April 8, 2006

JINGGE WU
PRIMARY EXAMINER

